

XGEN COATING SYSTEM™



**X-RESTORE®**  
OXIDIZED METAL  
CLEAR

## TECHNICAL PRODUCT DATA SHEET (Page 1 of 4)

**PRODUCT DESCRIPTION** - xGen Coating System's X-RESTORE Oxidized Metal is a two-component clear coat corrosion treatment system designed for long-term protection of coated substrates, specifically non-ferrous metals (aluminum, copper, brass, nickel, and galvanizing), from oxidation and abrasion. X-RESTORE Oxidized Metal was formulated for Original Equipment Manufacturers (OEM) and Military applications but has multiple other uses. Potential application areas include marine environments resulting from salt air/mist, high humidity areas, acid or alkaline environments, and DOT/automotive equipment resulting from salt applications during winter conditions. X-RESTORE Oxidized Metal can also be applied over weathered or oxidized painted surfaces to restore color and gloss. X-RESTORE Oxidized Metal, when applied properly, will not yellow, chip, crack, or peel. If gouged or damaged, the finish is repairable. The product is designed to coat surfaces that require a hard, flexible, and corrosion resistant thin coating. A value-added benefit of X-RESTORE Oxidized Metal is that it can withstand temperatures of 2,000°F/1093°C. X-RESTORE Oxidized Metal offers excellent coverage, durability, and oxidation protection as well as being an EPA compliant coating. X-RESTORE Oxidized Metal is applied clear and will dry clear.

**ENVIRONMENTAL ADVANTAGES** - xGen Coating System's X-RESTORE Oxidized Metal is an EPA compliant coating and does not contain lead or chromates. The solid and semi-solid sludge produced in spraying and clean up can be dried and sent to a "Class B" landfill. Please follow local and state regulations in the proper use and disposal of this product.

### CHARACTERISTICS

- Excellent hardness
- Excellent flexibility
- Excellent impact resistance
- Excellent adhesion, mar, and abrasion resistance
- Excellent heat tolerance (2000°F/1093°C+ with no visible effects)
- Excellent chemical resistance
- Non-photochemical reactive
- Application by spraying, dipping or wiping
- Little odor
- Solvent is used for clean-up
- Air dry or force curing preferred
- Pot life of 24 hours
- Recommend NOISH mask and gloves

### USES

- Aluminum
- Brass
- Copper
- Stainless Steel
- Nickel
- Galvanized Surfaces
- Oxidized Painted Surfaces
- Welding Tips/Nozzles

### AIR QUALITY DATA

- Free of lead and chromates
- VOC (Volatile Organic Compounds) 2.68 lb/gal; 321 gm/ltr when catalyzed

### PHYSICAL DATA

- Liquid, clear
- Specific Gravity: > 1
- Evaporation Rate: Slower than ether
- % Solid by weight: 24.2%
- % Solid by volume: 23.4%
- Weight per gallon: 8 lbs.
- Flash Point: 150°F / 65.5°C Part A
- Flash Point: > 150°F / 66°C Part B
- VOC: 2.68 lb/gal.; 321 gm/ltr



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### APPLICATION

Recommended film thickness for test results on Aluminum is 0.1-0.2 mil (0.0254-0.762 mm)  
 Salt Spray: Excellent – Passed 4,000 hour test with no visible effects  
 UV Resistance: Excellent  
 Solvent Resistance: 50+ Double-rubs MEK, Xylene, Acetone  
 Flexibility: Excellent  
 Theoretical Coverage at 0.1 mil: 3,882 sq. ft. (1,604 x 24.2% solids by weight)  
 Hardness: Up to 4H – Excellent  
 Drying Time (Air Dry): Recoat – Before 1 hour @ 50% humidity and 75°F/23.9°C  
 Drying Time (Air Dry): Dust Free – 20 minutes @ 50% humidity and 75°F/23.9°C  
 Drying Time (Air Dry): Dry to Handle – 1-2 hours @ 50% humidity and 75°F/23.9°C

### SPECIFICATIONS -

*Metals:* Surface must be free of grease, oil, dirt, and other foreign matter. Oxidation material must be removed.

*Paints:* Surface must be free of grease, oil, dirt and other foreign matter and completely cured.

*Powder Coating:* Surface must be free of grease, oil, dirt and other foreign matter.

### CLEANING / PRETREATMENT

*Cleaning and Pretreatment:* Cleaning and pretreatment are critical for success of any coating system. As each application may be different, the cleaning/preparation may be different as well. xGen Coating System recommends different cleaning/pretreatment processes depending upon each application and the amount of cleaning required:

*General Purpose Cleaning/Degreasing:* Use xGen Coating System's X-CLEAN & PREP. This concentration will be sufficient for general cleaning/degreasing of the surface to be coated. Use appropriate cleaning equipment (clean cloth/rag, scrubbing brush, spray bottle, pump-up sprayer or pressure washer) for the substrate in question. If the recommended concentration is not sufficient to achieve adequate cleaning results, use a stronger concentration for more aggressive cleaning. If a stronger concentration is used, thoroughly rinse the surface to remove any cleaning solution residue prior to coating. If cleaning/coating a vertical surface, work methodically from the top of the substrate down to the bottom to ensure adequate cleaning, rinsing (if required), and coating are completed. Make sure the substrate to be coated is completely dry prior to X-RESTORE Oxidized Metal application.

*Aggressive Cleaning/Degreasing for Bare Metal Surfaces (Aluminum and Stainless Steel):* Use xGen Coating System's X-CLEAN & PREP Rinse & Etch, a triple combination acid based detergent, degreaser and metal brightener. This concentration will be sufficient for cleaning/degreasing of bare metal surfaces. If more aggressive cleaning is required, use a stronger concentration. DO NOT REDUCE MORE THAN RECOMMENDED RATE. Strong concentrations of the X-CLEAN & PREP may result in a "fogging or hazing" over of the metal surface. Use appropriate cleaning equipment (clean cloth/rag, scrubbing brush, spray bottle, pump-up sprayer or pressure washer) for the substrate in question. After cleaning, thoroughly rinse substrate to remove any cleaning residue prior to coating. If cleaning/coating a vertical surface, work methodically from the top of the substrate down to the bottom to ensure adequate cleaning, rinsing (if required), and coating are completed. Make sure the substrate to be coated is completely dry prior to X-RESTORE Oxidized Metal application.





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### MIXING INSTRUCTIONS

To obtain optimum performance, the mixing instructions for X-RESTORE Oxidized Metal must be followed precisely. Each component has been precisely formulated for optimum flow and hardness characteristics.

- This is a two (2) part component mix consisting of 1 Part “A” to 3 Parts “B”.
- The 2-part components, when mixed completely, result in the predefined kit size (quart, gallon, etc.).
- Wear appropriate safety equipment during mixing to include latex or nitrile gloves and safety goggles.
- In a clean glass, metal, or HDPE plastic container, mix parts by volume component A with component B.
- Agitate periodically with a laboratory magnetic stirrer, variable speed drill or drill press (mix time varies based on humidity) until the liquid becomes clear. Let the product stand uncovered estimated 10 minutes prior to application. This induction or sweat-in period is required to ensure that the product is catalyzed properly. During the mixing/catalyzation process, the combined products may generate a slight exothermic heat reaction and the sides of the container may feel warm to the touch. This reaction is normal. The catalyzed product will have a pot life of at least 24 hours. If temperatures are above 90°F/32.2°C, pot life may be shortened.

NOTE: For each ounce of Part “A”, add 3 ounces of Part “B”. This results in the 1:3 general ratios appropriate for a partial mix. Periodic agitation for 20-30 minutes. NOTE: mixture will turn to a “yellowish / lime green color” and container will get warm to touch. When mixture turns “clear”, (time varies based on humidity) let dwell for 10 minutes and product is ready to apply.

### APPLICATION

Application is by spraying, dipping or wiping. Amount of coverage per gallon is dependent upon the applicator and the equipment used. For faster dry, product may be heat cured for 30 minutes at 250°F/121°C but ambient drying conditions (10-15 days for full cure) are sufficient if time is available. Regular air-drying is acceptable but cure times will be longer. Ensure that proper protective clothing and equipment is used during application. Wear NIOSH approved respirator and solvent resistance gloves and safety goggles.

#### *Spraying X-RESTORE Oxidized Metal with Standard Spray Painting Equipment*

- Wear appropriate safety equipment during mixing to include latex or nitrile gloves and safety goggles.
- Mix X-RESTORE Oxidized Metal as instructed.
- For best results, the fluid nozzle on the spray equipment should be very small, 0.5 to 1.0 will provide the best application. Fluid Nozzle sizes will be dependent upon the equipment used. Please consult with your local equipment supplier for the best equipment choice for the application. The viscosity of the catalyzed product is very close to water, 14-16 seconds on a Zahn #2 viscosity cup.
- The first pass of spraying should be a light mist or fog coat. The second coat should be a light to medium wet coat. Recoating cannot be accomplished if the coating has cured for an hour or longer.
- Surface cure can be achieved in 30 minutes with the addition of heat (200-500°F/93-260°C) and sufficient air movement.
- Parts can be handled in 1-2 hours when air-drying at 50% humidity and 75°F/23.9°C. Caution: Full cure may not occur for 10-15 days without adding heat. Note: Most catalyzed systems require 10-15 days before a qualified ASTM test can be performed.

#### *Wiping X-RESTORE Oxidized Metal (Unpolished surfaces)*

- Wear appropriate safety equipment during mixing/application to include latex or nitrile gloves and safety goggles.
- Mix X-RESTORE Oxidized Metal as instructed.
- Apply X-RESTORE Oxidized Metal on the surface in one direction only. Wipe in the same direction and manner until the substrate is completely coated. DO NOT RUB THE X-RESTORE PRODUCT INTO THE SURFACE.
- Recoating cannot be accomplished if the coating has cured for an hour or longer.





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*Dipping X-RESTORE Oxidized Metal (Unpolished Surfaces)*

- Wear appropriate safety equipment during mixing/application to include latex or nitrile gloves and safety goggles.
- Mix X-RESTORE Oxidized Metal as instructed.
- Submerge clean part into the X-RESTORE Oxidized Metal mixture and let the excess material drip off.
- X-RESTORE Oxidized Metal has low surface tension and it may be necessary to wick off excess X-RESTORE Oxidized Metal accumulating at the bottom of the part by touching with a dry paper towel or cloth.
- Parts that are dipped may need to be hung vertically to dry.
- Recoating cannot be accomplished if the coating has cured for an hour or longer.

### **CLEAN-UP**

Use solvent for cleanup such as acetone or MEK. Ensure the all equipment for product application is thoroughly cleaned or disposed of according to local and state regulations. Ensure that proper protective clothing and equipment is used during application and cleanup.

### **WARRANTY**

The technical data contained herein is accurate to the best of our knowledge. xGen Coating System warrants that coatings represented herein meet their formulation standards. No other warranty is expressed or implied, including warranties of merchantability and fitness for a particular purpose. Published technical data and instructions are subject to change without notice. Contact your XGen Coating System's Representative for current technical data and instructions.